

ABSTRACT

A method of diagnostic imaging in a shortened acquisition time for obtaining a reconstructed diagnostic image of a portion of a body of a human patient who was administered with dosage of radiopharmaceutical substance radiating gamma rays, using SPECT. The method comprises acquiring photons emitted from said portion of the body, by means of a detector capable of converting the photons into electric signals, wherein the total time of photon acquiring is substantially shorter than the clinically acceptable acquisition time; processing said electric signals by a position logic circuitry and thereby deriving data indicative of positions on said photon detector crystal, where the photons have impinged the detector; and reconstructing an image of a spatial distribution of the pharmaceutical substance within the portion of the body by iteratively processing said data.